

### AMENDMENTS TO THE DRAWINGS

Please substitute the attached drawing sheets for all of the drawing sheets presently of record. In Fig. 3, reference numeral 100 is added; in Fig. 5, reference numeral 76 (previously submitted) is added.

## REMARKS

The application has been amended to correct the cited informalities, to distinguish the claimed invention over the cited prior art, and to place the application, as a whole, into a *prima facie* condition for allowance. Substantial care has been taken to avoid the introduction of any new subject matter into the application as a result of the foregoing amendments.

The Examiner has objected to the drawings, stating that the line quality is poor. In complete response thereto, Applicant is submitting herewith a complete set of replacement formal drawings, which include the amendment to Fig. 5 previously submitted to the Examiner, as well as an amendment to Fig. 3 being made herein. Applicant respectfully submits that the Examiner's basis for objection to the drawings should be deemed overcome. Reconsideration and withdrawal of the objection to the drawings are respectfully solicited.

Claim 14 has been objected to on the basis that the claim begins with "he". Applicant submits that this typographical error has now been corrected, and reconsideration and withdrawal of the objection to claim 14 are respectfully solicited.

Claims 1 - 21 have been rejected under 35 U.S.C. §112, first paragraph, as purportedly failing to comply with the written description requirement. Specifically, the Examiner has stated that the claims contain subject matter which was purportedly not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the invention was filed, had possession of the claimed invention. In particular, the Examiner has stated that the support shaft was not disclosed in the specification and is unclear as to which part is being referred to in Figures 3, 11a - 11c. Applicant respectfully traverses the Examiner's basis for rejection of claims 1 - 21. Applicant respectfully submits that the shaft (now provided with reference numeral 100 in the drawings and specification) was in the application as originally filed, and further the specification specifically refers to the presence of a shaft, in the last line of paragraph [0034] (as originally filed): "Additionally, hub 80 may be optional; pinion wheel sides 18 may be attached directly to the shaft of a motor or geared drive" such as motor 30 referred to in following paragraph [0030] (as originally

numbered). Accordingly, Applicant respectfully submits that substantial basis was provided in the application as originally filed, to support not only the prior amendment to claims 1 and 15, but also that the inventor, at the time the invention was filed, had possession of the claimed invention.

Notwithstanding the foregoing traversal, Applicant has deleted the objected-to language from independent claims 1 and 15, as being no longer necessary to distinguish the claimed invention over the cited prior art, in view of Applicant's further amendments to claims 1 and 15, discussed in detail hereinbelow. Accordingly, Applicant respectfully submits that the Examiner's basis for rejection of claims 1 - 21 under 35 U.S.C. §112, first paragraph should be deemed moot, and reconsideration and withdrawal of the Examiner's rejection of claims 1 - 21, under 35 U.S.C. §112, first paragraph, are respectfully solicited.

Claims 1 - 21 have been rejected under 35 U.S.C. §103(a) as being unpatentable over *Bachmann et al.*, US 4,327,893 in view of *Imase et al.*, US 6,023,989. Applicant respectfully traverses the Examiner's substantive bases for rejection of the claims.

With respect to the Examiner's rejection of independent claims 1 and 15, under 35 U.S.C. 103(a) based on the *Bachmann et al.* and *Imase et al.* references, Applicant firstly respectfully submits that the Examiner's purported combination of the *Imase et al.* and *Bachmann et al.* references is improper.

Two or more references may not be combined to support an assertion of obviousness of a claimed invention absent a teaching or suggestion to their combination. Further, two or more references may not be properly combined, if to do so would frustrate the functions, goals or purposes of one or more of the respective references.

The *Bachmann et al.* reference is directed to a blade damper construction, in which a rack and gear drive is provided for lifting and lowering a blade plate. Racks are formed in each of the opposing sides of the blade plate, in particular, for use in the environment of ducts leading, e.g., from combustion chambers to scrubbers and thence to a smokestack. Such devices are typically very large with a blade being several feet in height and weighing as much as several hundred or thousand pounds. In this reference,

racks 46 are held in vertically extending U-shaped holders 47 affixed to each of the vertical side edges of the main body of the blade 45. In addition, the blade of this reference is configured to be moved to and away from the frame which holds the blade, when the blade is in its lowered (closed) position, to facilitate the seal between the blade and the frame (when the blade is in its lowered position blocking the passageway). This movement toward and away from the blade frame is permitted by the use of the U-shaped holders, which extend parallel to the sides of the pinions, but at a distance to either side thereof (see Fig. 4). The movement of the blade in the upstream/downstream directions is prompted by a movable thrust frame 58 (see, col. 4, line 51 - col. 5, line 39), which moves upstream or downstream, relative to the direction of flow of the gases, to push the damper blade against inner flange 28B (see Fig. 7). Accordingly, of necessity, a certain amount of gross relative lateral movement between the rack and the gears is not only permitted, but necessary, for the proper function of the apparatus.

In contrast, the *Imase et al.* reference discloses a rack and gear apparatus which is intended for high precision machinery, such as industrial robots or machine tools, where no "play" of any kind can be permitted. Furthermore, a key feature of the apparatus of *Imase et al.* is to have the gear be continuously thrust against the rack (see, col. 5, ll. 10 - 35). This continuous pressure, in the preferred embodiment disclosed in the reference, is accomplished by the use of a saddle 9, which essentially clamps side edge regions of the base table 3, as can be seen in the only complete illustration of the preferred embodiment, of Fig. 1. The other figures, which show a gear and rack omit the saddle structure merely for purposes of simplifying the illustration. As may be readily appreciated, if the gear is to be maintained in a constant state of pressurization against the rack, no such relative movement between the rack and the gear can be permitted.

Therefore, Applicant respectfully submits that one seeking to modify the apparatus of the *Bachmann et al.* reference, in which relative movement or "play" between the rack and the gear is essential for the functioning of a critical feature of the apparatus (the movement of the blade plate toward and away from the frame), would

be affirmatively prompted *away* from looking to a high-precision apparatus such as that disclosed in the *Imase et al.* reference, much less adopt the teachings of that reference. This is because the two references affirmatively teach away from one another with respect to a common structural characteristic, namely the positional and operational relationship between the gear and the rack. Accordingly, Applicant submits that not only is there no teaching or suggestion for the combination of those references, but also any attempt to combine the teachings of these references would serve to frustrate the goals and objectives of each. Therefore, Applicant respectfully submits that the Examiner's proposed combination of those references is improper and may not be used as a basis for rejection of the claims under 35 U.S.C. 103(a).

Even if the *Bachmann et al.* and *Imase et al.* references could properly be combined, which Applicant respectfully submits is not the case, the resulting construction remains incapable of even remotely teaching or suggesting the patentably distinguishing structure and mode of operation of Applicant's invention of amended claims 1 and 15. A combination of the general damper apparatus of *Bachmann et al.*, with the pressurized pinion of *Imase et al.* would require that the resultant structure have a pinion that is continuously thrust against the edge of the blade plate. That is, the pinion would impart forces against the rack, not only in the direction of movement of the rack, but also in a direction perpendicular to the direction of movement of the rack, in varying proportions, due to the complex curved shape of the involute rack teeth as disclosed in *Imase et al.*

Applicant's invention, however, as defined in amended independent claims 1 and 15, requires, among other limitations, that the toothed rack further comprise a series of teeth formed in at least one side of the plate, the teeth having sides extending substantially parallel to one another and substantially perpendicular to a direction of movement of the plate, so that upon engagement of the one or more pinion wheels with the toothed rack, the one or more pinion wheels impart forces to the plate substantially exclusively in the direction of movement of the plate. Support for this limitation may be found in the application as originally filed, both in Figs. 3 and 10 (wherein the straight, predominantly parallel edges of the teeth are shown), as well as

in paragraph [0009] of the application as originally filed (which is in the Summary of the Invention section of the application), wherein it states that "[t]he toothed edges of the blade plate engage with specially designed pinion wheels to impart a linear force to the blade plate..." (Emphasis added). Furthermore, it is clearly shown in Fig. 3, that the pinion pins do not "bottom out" in the teeth, and thus do not impart significant force in directions normal to the direction of movement of the plate. In addition, if a pinion pin, which is circular in cross section, confronts a tooth that has a straight edge which is essentially, if not actually, perpendicular to the direction of movement of the blade plate, because there is only point contact between the pinion pin and the blade, force is transmitted essentially only in the direction of movement of the blade plate. Therefore, Applicant submits that substantial bases were provided in the specification, as originally filed, to provide support for the foregoing amendment, and that the inventor clearly had possession of the invention at the time of filing of the application. Entry and acceptance of the amendments to claims 1 and 15 are respectfully solicited.

Applicant further respectfully submits that neither of the cited *Bachmann et al.* and *Imase et al.* references, whether taken alone or in combination, is even remotely capable of teaching or suggesting the structure and mode of operation of Applicant's invention of amended independent claims 1 and 15. Accordingly, Applicant respectfully submits that Applicant's invention of amended claims 1 and 15 should be deemed to patentably distinguish over the cited prior art, and that the Examiner's substantive basis for rejection of the claims should be deemed overcome. Reconsideration and withdrawal of the rejections of claims 1 and 15, and allowance thereof, are respectfully solicited.

Inasmuch as dependent claims 2 - 8 and 10 - 14 and 16 - 21 merely serve to further define the subject matter of amendment independent claims 1 and 15, which themselves should be deemed patentable, Applicant submits that dependent claims 2 - 8 and 10 - 14 and 16 - 21, likewise should be deemed to patentably distinguish over the cited prior art. Reconsideration and withdrawal of the rejection of claims 2 - 8 and 10 - 14 and 16 - 21, and allowance thereof are respectfully solicited.

Based on the foregoing, Applicant submits that the application, as a whole, including all of claims 1 - 8 and 10 - 21, is in a *prima facie* condition for allowance at this time, and reconsideration and allowance of the application, are respectfully solicited.

Should anything further be required, a telephone call to the undersigned, at (312) 456-8400, is respectfully invited.

Respectfully submitted,  
GREENBERG TRAURIG, LLP


Dated: September 22, 2006

  
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One of Attorneys for Applicant

**CERTIFICATE OF MAILING**

I hereby certify that this AMENDMENT AND COMMUNICATION AFTER FINAL ACTION, is being deposited with the United States Postal Service as first class mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on September 22, 2006.

  
Douglas B. Teaney